

REPUBLIC OF SOUTH AFRICA

THE PATENTS ACT, 1952, AS AMENDED

APPLICATION FOR PATENT
(INCLUDING POWER OF ATTORNEY)

Filing date

THIS 9

Application No.



Full Name(s) of Applicant(s): NEVADA ENZYMES, INC.

Address(es) of Applicant(s): 3049 Rigel Building C. Las Vegas, Nevada U.S.A.

Full Name(s) of Inventor(s): John J. Battistoni and William A. Hibbard.

We do hereby declare that ~~Us~~ we are in possession of an invention the title of which is

ENZYMATIC CLEANING COMPOSITION

I am/We are the assignee(s) of the inventor(s). (Delete if not applicable).

★ Application for protection for the invention has been made in the following countries and on the following official
 ★ dates: ~~XXXXXXXXXXXX~~ (Country) ~~XXXXXXXXXXXX~~ (Date)

★ The said application for each of the said applications was the first application filed in a convention country in
 ★ respect of the relevant invention by me/us or by any person from whom I/we derive title

To the best of my/our knowledge and belief there is no lawful ground for objection to the grant of a patent to
 me/us on this application. I/We pray that a patent be granted to me/us for the invention

★ in priority over other applicants and that such patent shall have the official date of the first application in a
 ★ convention country, namely:

I/We enclose the provisional/complete specification.

I/We hereby appoint the partners and qualified staff of the firm of W. E. JOHN & KERNICK, jointly and
 severally, to act for me/us in all matters relating to this application and any Letters Patent granted thereon.

Address for Service:

Dated this 13th day of NOVEMBER 1999

W. E. JOHN & KERNICK,
 VAN DER STEL BUILDING,
 PRETORIUS STREET,
 (P.O. BOX 1840), PRETORIA.

International Classification	
Class	Sub-class

Signature of each
 applicant and
 capacity, where
 necessary, for
 example, Director,
 Secretary, Presi-
 dent, etc.

Joseph C. Crawford
 Secretary

PATENTS FORM NO. 3



REPUBLIC OF SOUTH AFRICA

THE PATENTS ACT, 1952

COMPLETE SPECIFICATION

698059

NEVADA ENZYMES, INC.,

3049 Rigel Building C,
LAS VEGAS NEVADA U.S.A.

"ENZYMATIC CLEANING COMPOSITION"

We do hereby declare this invention, the manner in which and the method by which it is to be performed, to be particularly described and ascertained in and by the following statement:-

Continuing investigations have been made in attempting to find and prepare improved cleaning compositions. Such attempts to date have resulted in the fabrication of a great number of cleaning materials many of which have rather limited uses for specific applications. For example different cleaners are marketed for dishwashing, laundry, metal cleaning, rug shampooing, window washing, tile cleaning, etc., each requiring specialized ingredients for removal of various soiling materials. Such special as well as general purpose cleaners rely on the capabilities of one or more surfactants most suitable for the specific applications for which they are intended as well as to present optimum cleaning capabilities for the types of soils to be removed such as grease, oil, dirt, foods, etc. A number of general purpose cleaning materials are available which again depend essentially solely on the ability of the surface activity or detergent action of the surfactants present therein to emulsify the undesirable stain or soiling material from the substrate. Further, stains such as grease, oil, blood, gum, waxes and the like which are difficult to emulsify have required the preparation of rather harsh and concentrated detergents and cleaning agents which render such compositions less desirable for cleaning purposes requiring milder properties. Stains of

Such special as well as general purpose cleaners, on the capabilities of one or more surfactants most suitable for the specific applications for which they are intended as well as to present optimum cleaning capabilities for the types of soils to be removed such as grease, oil, dirt, foods, etc. A number of general purpose cleaning materials are available which again depend essentially solely on the ability of the surface activity or detergent action of the surfactants present therein to emulsify the undesirable stain or soiling material from the substrate. Further, stains such as grease, oil, blood, gum, waxes and the like which are difficult to emulsify have required the preparation of rather harsh and concentrated detergents and cleaning agents which render such compositions less desirable for cleaning purposes requiring milder properties. Stains of

1 certain types are often practically impossible to remove from
2 fabrics by water based cleaners because of the nature of the
3 staining composition and its affinity for the fabric materials.
4 Accordingly, hydrocarbon or chlorinated hydrocarbons, alcohols
5 and solvents of similar nature are turned to in removing such
6 stains. However, notwithstanding the relative effectiveness of
7 such solvents, they are undesirable because of toxic, flammable,
8 and skin irritation characteristics and must be used and stored
9 with great care especially in domestic applications.

10 The use of enzymes as an aid to cleaning has long been
11 recognized. Many staining materials which although seemingly
12 impermeable to detergent emulsification, when exposed to active
13 enzymes are broken down into compounds which are more readily
14 emulsified by surfactants. However, most enzymes are known to
15 possess a high degree of specificity for the substances on
16 which they act. The presence of a number of enzymes each able
17 to act on different staining materials would be most desirable.
18 On the other hand for general purpose cleaning, the use of a
19 number of enzymes may be economically unattractive.

20 Household enzymatic cleaners have been available in
21 dry form with liquid compositions being considered less desirable
22 because of tendencies for reduction in activity. It has been
23 reported that dry enzymatic cleaning compositions experience
24 significant activity loss as on standing in aqueous solution
25 for a time. Although dry compositions are easily mixed, packaged
26 and handled, the constituents including the dry enzymes must
27 be allowed to solubilize before activity begins. Thereafter,
28 additional time for soaking the soiled substrate must be granted
29 in order for the enzymes to sufficiently act. Further, in many
30 instances liquid and especially aqueous cleaning compositions

1 are not only desirable but necessary in order to readily and
2 effectively remove soils and stains from most substrates.

3 Summary of the Invention

4 The cleaning composition of the invention comprises
5 an aqueous composition containing as the active cleaning
6 ingredients a major amount of surface active agents and a
7 small amount of a fermented enzymatic material prepared in
8 situ. The composition is suitable for general purpose
9 cleaning and yet may be used in applications requiring the
10 mildest of detergent powers in view of the manner in which
11 the enzymes present rapidly react with soiling and staining
12 materials which are then easily removed by the detergent
13 action of the composition. The composition also offers the
14 advantage of being liquid and accordingly need not be dissolved
15 for enzyme activation and use. Further, the enzymes remain
16 in activated form and at maximum activity within the aqueous
17 solution. Although the specific composition of the enzymatic
18 material is not completely understood due to its complexity,
19 it will be described by its manner of preparation. The
20 enzymatic composition is prepared by fermenting an aqueous
21 mixture of black cane molasses, raw cane sugar and malt in
22 the presence of yeast and a magnesium catalyst. The resulting
23 composition is combined with surfactants such as soaps,
24 synthetic detergents, water softeners, and mixtures thereof
25 and is non-toxic to the extent of being substantially harm-
26 less to human tissue. Other advantages and properties will
27 be described throughout the following description.

28 Detailed Description of the Invention

29 The enzymatic composition which although present in

2 cribed he n and which results in substan l improvement of
3 the cleaning qualities thereof, comprises a fermented mixture
4 of molasses, raw cane sugar, malt, yeast and a magnesium salt
5 catalyst. These materials are reacted under such conditions
6 that fermentation is substantially carried out within a mixture
7 having the following proportions by weight:

8	Molasses	40-80%	by weight	
9	Cane sugar	15-40%	"	"
10	Malt	5-10%	"	"
11	Magnesium salt	0.5-5%	"	"
12	Yeast	0.5-5%	"	"

13 The molasses used in preparing the fermented mixture
14 is black untreated cane molasses commonly referred to as cane
15 blackstrap molasses or simply, blackstrap. This material is
16 syrupy mother liquor recovered in refining cane sugar from
17 which crystallizable sucrose has been removed. The blackstrap
18 molasses generally contains up to about 50% sucrose in addition
19 to reducing sugars such as glucose and maltase as well as ash,
20 organic non-sugars and some water. The presence of the sugars
21 of the type found in the molasses is important in encouraging
22 the activity of the enzymes and the yeast bacteria by which they
23 are produced. Although the untreated cane blackstrap molasses
24 is preferred other molasses such as beet molasses, barrel
25 molasses and the like may also be used as a natural source of
26 the materials required for the enzymatic fermentation. Pre-
27 ferred concentrations of the molasses are between about 50 and
28 about 70% by weight.

29 It has been found that in order to prepare a cleaning
30 composition according to the invention having optimum cleaning

1 properties, a portion of the fermentable materials present in
2 the reaction mixture comprises sugar. Although it should not
3 be regarded as limiting, it has been found that the use of raw
4 sugar, that is the sugar which has not been refined so as to
5 have molasses and other impurities removed and further chemi-
6 cally treated so as to decolorize and purify results in
7 further improved properties. Although the reason for such
8 improvement may not be readily apparent it is believed that the
9 presence of the impurities as well as the absence of trace
10 chemicals added during purification in the manufacture of white
11 sugars in some way enhances the activity of the yeast and malt
12 enzymes. The amount of sugar present in the fermenting compo-
13 sition may be up to 50% by weight but is preferably between
14 about 15 and about 40%. It will also be understood that specific
15 amounts of sugar used in obtaining optimum desirable properties
16 will also depend somewhat on the type of molasses added.

17 The essential enzymes present in the composition of
18 the invention are provided by yeast and malt. The specific
19 yeast utilized is that containing bacteria of the family
20 *saccharomyces cerevisiae* commonly available as baker's yeast.
21 Any such type of yeast may be used but it is convenient to add
22 the dry yeast composition whose activity is restored upon
23 mixture with water. A number of enzymes are produced by the
24 active yeast bacteria especially during the fermentation
25 reaction and include both hydrolytic and oxydative enzymes
26 such as invertase, catalase, lactase, maltase, carboxylase
27 and others. It will be appreciated that actual amounts of
28 the various types of enzymes produced will be dependant on a
29 number of factors including the types of molasses and sugar
30 used in preparing the fermentation mixture. However, again it

1 is believed that in utilizing the blackstrap cane molasses and
2 raw cane sugar optimum enzyme yields and activity will be
3 obtained.

4 Additional enzymes are utilized in advantageously
5 contributing to the fermentation reaction and the final com-
6 position obtained therefrom by the addition of malt. The
7 specific malt utilized is preferably a diastatic malt which
8 contains a number of enzymes including diastase, maltase and
9 amylase. The malt also is believed to improve the activity
10 of the yeast in addition to contributing to the overall potency
11 and activity of the enzymatic composition within the final
12 cleaning mixture. The amounts of yeast used in the fermenta-
13 tion composition is between about 0.5 and about 5% and pre-
14 ferably between about 1 and about 3%. The amount of malt present
15 may be between about 2 and about 10% and preferably between
16 about 5 and about 10% by weight. It will again be appreciated
17 that specific amounts of the materials utilized may be varied
18 to yield optimum compositions desired.

19 The presence of a small amount of inorganic catalyst
20 such as magnesium salt enhances the activity of the enzymes
21 not only during the fermentation reaction but thereafter in
22 the cleaning composition in attacking and decomposing the soil-
23 ing materials. Magnesium sulfate is especially useful for this
24 purpose and small amounts for example between about 0.1 and
25 5% and preferably between about 0.5 and 3% based on the fermenta-
26 tion reaction mixture are suitable for this purpose.

27 The fermentation reaction may be conveniently carried
28 out according to the following procedure: The molasses, sugar
29 and magnesium salt are added to a suitable amount of warm and
30 preferably softened water. Although the specific amount of

2 critical is necessary in order to facilitate easy admixture
3 as well as to activate the yeast and dissolve the other solid
4 materials. Suitable amounts of water are from about 2 to about
5 20 times the total weight of the active materials used in the
6 fermentation reaction. The water must meet certain temperature
7 requirements in order to prevent inactivation of the enzymes.
8 Thus, for example, water temperatures greater than about 150° F.
9 must be avoided and preferred temperatures are between about 80
10 and about 110° F. The use of cold water may also result in
11 unduly slow fermentation reaction rates and thus, should also be
12 avoided. The use of soft water although not critical seems to
13 result in more effective and rapid fermentation reactions as
14 compared to hard water, that is water containing rather large
15 amounts of calcium. After the molasses, sugar and magnesium
16 salt have been effectively mixed and dissolved the malt and the
17 yeast are added, the mixture stirred and allowed to set until
18 fermentation is essentially complete. The reaction time may be
19 between about 2 and about 5 days at temperatures between about
20 70 and 100° F. Completion may be readily ascertained by noting
21 that the effervescence of the reacting mixture has substantially
22 subsided. Again, it is preferred to allow the mixture to stand
23 at temperatures between about 70 and 110° F. in order that the
24 reaction time will not be unduly prolonged. However, somewhat
25 lower temperatures may be utilized where rapid fermentation
26 times are not especially desired.

27 Following the fermentation reaction the mixture may
28 simply be compounded with the desired surfactants and there-
29 after diluted with additional water to the desired extent in
30 order to form a useful concentrate which may be applied readily

1 or further diluted for the intended cleaning purposes. The
2 enzymatic composition may be combined with any one or combina-
3 tion of a great number of useful soaps, detergents and other
4 useful surfactants such as water softeners and the like. The
5 amount of enzyme containing fermentation reaction product
6 present in the composition will depend on the intended use of
7 the product and the extent to which dilution is desired.
8 However, the amount, based on the total active ingredients
9 should be controlled within certain limits based on solubilities,
10 odors, etc. Accordingly amounts up to about 10% are acceptable
11 and amounts between about 0.5 and about 5% by weight are pre-
12 ferred. It is found that greater concentrations of the fermenta-
13 tion reaction product will cause some cloudiness of the
14 product solution as well as render a somewhat disagreeable odor.
15 Thus, increased concentrations are to be avoided for acceptable
16 household cleaners. It should be noted that the fermentation
17 reaction should be allowed to be substantially completed before
18 admixture with surfactants. It has been found that the presence
19 of these materials during fermentation often inhibit bacterial
20 and enzymatic activity and production because of basicity,
21 concentrations, etc.

22 Synthetic detergents utilized in the instant compo-
23 sition are preferably the non-petroleum derivatives which are
24 readily biodegradable, that is, which may be acted upon by
25 bacteria and thereupon be reduced to their elemental compo-
26 sitions upon disposal. Accordingly, the synthetic detergents
27 such as alkyl aryl sulfonates are to be avoided. Preferred
28 detergents are the anionic type surfactants and particularly
29 the sodium alkyl sulfates prepared by sulfating vegetable and
30 animal fats and oils and alcohols and their mixtures derived

1 from the reduction or hydrogenation of the corresponding
2 vegetable or animal fatty acids. Coconut, palm, tallow, castor,
3 olive, citrus and similar oils are generally used for this
4 purpose the specific oil or fat material being dependent on
5 the desirable properties of the resulting detergent. The pre-
6 ferred materials are those containing fatty acids which yield
7 alcohols and alcohol mixtures having between about 8 and about
8 20 carbon atoms the sulfates of which are neutralized with
9 caustic in order to prepare the final water soluble detergent.
10 Mixtures of coconut oil fatty acid derived alcohols have been
11 found to be especially useful in view of the desirable detergent
12 properties obtained. Other suitable sulfates are those prepared
13 by sulfating olefins resulting in secondary alkyl sulfates
14 having between about 8 and about 20 carbon atoms. Mixtures are
15 especially useful in providing compositions having surfactant
16 properties similar to those of the sulfated natural oil and fat
17 derivatives. Other anionic surfactants include the soaps or
18 alkali metal salts of fatty acids having from 10 to 18 carbon
19 atoms and mixtures thereof. Salts of palmitic, stearic and
20 oleic acids are preferred and thus mixtures derived from palm
21 and olive oils, lard and tallow are especially useful. The
22 total amount of the anionic type surfactant may be up to as high
23 as, for example, 80% by weight based on the total active
24 ingredients (excluding water) of the final cleaning composition.
25 Preferred amounts are up to about 60% and more preferably about
26 50% by weight.

27 In order to render the cleaning composition somewhat
28 more versatile it is preferred to substitute some portion of
29 the anionic detergents with a small amount of one or more
30 nonionic surfactants. Useful nonionic type surfactants are

1 from the reduction or hydrogenation of the corresponding
2 vegetable or animal fatty acids. Coconut, palm, tallow, castor,
3 olive, citrus and similar oils are generally used for this
4 purpose the specific oil or fat material being dependent on
5 the desirable properties of the resulting detergent. The pre-
6 ferred materials are those containing fatty acids which yield
7 alcohols and alcohol mixtures having between about 8 and about
8 20 carbon atoms the sulfates of which are neutralized with
9 caustic in order to prepare the final water soluble detergent.
10 Mixtures of coconut oil fatty acid derived alcohols have been
11 found to be especially useful in view of the desirable detergent
12 properties obtained. Other suitable sulfates are those prepared
13 by sulfating olefins resulting in secondary alkyl sulfates
14 having between about 8 and about 20 carbon atoms. Mixtures are
15 especially useful in providing compositions having surfactant
16 properties similar to those of the sulfated natural oil and fat
17 derivatives. Other anionic surfactants include the soaps or
18 alkali metal salts of fatty acids having from 10 to 18 carbon
19 atoms and mixtures thereof. Salts of palmitic, stearic and
20 oleic acids are preferred and thus mixtures derived from palm
21 and olive oils, lard and tallow are especially useful. The
22 total amount of the anionic type surfactant may be up to as high
23 as, for example, 80% by weight based on the total active
24 ingredients (excluding water) of the final cleaning composition.
25 Preferred amounts are up to about 60% and more preferably about
26 50% by weight.

27 In order to render the cleaning composition somewhat
28 more versatile it is preferred to substitute some portion of
29 the anionic detergents with a small amount of one or more
30 nonionic surfactants. Useful nonionic type surfactants are

1 condensates of ethylene oxide with alkyl phenols, for example,
2 alkyl aryl polyethylene glycols such as alkyl phenyl ethers of
3 polyethylene glycol. Materials of this type are commercially
4 available, for example as the Tergitol nonionic surfactants.
5 Polyoxyethylene esters of sorbitan fatty acids or the like
6 may also be used. The amount of the nonionic type surfactants
7 is preferably in the order of up to about 10% by weight based
8 on the total active ingredients.

9 For general purpose and laundry cleaners it is further
10 preferred to enhance or fortify the surfactant properties of
11 the composition with well known inorganic surface active
12 materials such as sodium tripolyphosphate, sodium pyrophosphate,
13 sodium borate, sodium sesquicarbonate, sodium silicates, etc.
14 and mixtures thereof. The presence of these materials renders
15 the final cleaning composition efficient even under hard water
16 conditions as well as giving added and more versatile surface
17 active properties to the composition. Useful amounts of these
18 types of known surfactants may be up to about 60% by weight of
19 the active ingredients and preferably up to about 50%. A very
20 suitable and versatile cleaning composition has been found which
21 contains between about 40 and about 48% each of the inorganic
22 surfactants and the anionic detergents with about 1 to about 5%
23 nonionic-type surfactants present therein based on the total
24 active ingredients.

25 It has also been found especially desirable and pre-
26 ferred to utilize a small amount of citric acid to the compo-
27 sition with concentrations of up to about 10% and preferably from
28 about up to about 5% being useful. The citric acid is found to
29 give improved rinsability as well as metal cleaning capabilities.

30 The above-noted surfactants may generally be added in

1 any sequence to the fermented composition previously described.
2 It is most useful to add the fermented composition to a
3 significant volume of water or vice versa before further adding
4 the surfactants in order to insure their complete solution.
5 Again, it is also desirable to utilize warm water and especially
6 that having a temperature of up to about 150° F. which further
7 enhances the common solubility of the materials therein and
8 thereby facilitates improved homogeneity. The total amount of
9 water present in the final composition may be varied somewhat
10 depending on the desired concentration of the active ingredients
11 in the product. However, since it is to be understood that this
12 product may be regarded as a concentrate which will be further
13 diluted upon use with certain exceptions, the amount of water
14 generally useful is at a weight ratio of water to active ingre-
15 dients between about 5:1 and about 20:1 and more preferably
16 between about 7:1 and about 10:1. Yet, it must be appreciated
17 that the product may be significantly further diluted with water
18 as desired for practical use requirements with such compositions
19 being within the purview of the disclosed invention. Although
20 it is by no means limiting it has also been found convenient,
21 for example, to utilize about one-half the water in blending the
22 active ingredients and thereafter the remaining water is added
23 merely to achieve the desired final dilution thereof.

24 By way of illustration the following composition was
25 prepared and tested for effectiveness under a variety of
26 cleaning conditions. The example should not be considered to
27 limit the scope of the composition to any specific materials or
28 proportions set forth therein.

29 Example

30 Into a large vat containing 100 gallons of warm, (85-95° F.)

4 of diastatic malt and 1 lb. of active baker's yeast was added
5 and the composition further mixed. Agitation was stopped and
6 the mixture allowed to stand for about 3 days until the effe-
7 vescent reaction had subsided indicating fermentation was
8 essentially completed. Approximately 2,000 gallons of hot
9 softened water (140-150° F.) was added to the mixture followed
10 by the further addition of 60 lbs. of alkyl phenyl ether of
11 polyethylene glycol (Tergitol nonionic NPX), 60 lbs. sodium
12 tetradecyl sulfate (Tergitol anionic 4), 1,500 lbs. sodium salt
13 of sulfated coconut oil fatty acid alcohols, 1,500 lbs. of a
14 mixture of sodium sesquicarbonate, sodium borate and sodium
15 tripolyphosphate, and 100 lbs. citric acid (U.S.P.). Water was
16 then added to bring the volume to 4,100 gallons. The mixture
17 was then allowed to cool to room temperature. The composition
18 when diluted approximately 1:8 by volume with water was
19 effective in easily removing hardened floor wax as well as
20 petroleum wax from walls after a brief soaking period of a few
21 minutes. The composition upon even further dilution removed
22 ink, blood, grease and grass stains from clothes and fabrics.
23 The composition was also found useful for general domestic
24 cleaning of laundry, dishes, rug and upholstery, etc. The
25 liquid form of the cleaner makes it especially useful and
26 convenient in spot cleaning because of ease of ready application.
27 The composition is easily rinsed and is safe to use on natural
28 and synthetic fibers alike.

29 A number of the effective enzymes of the composition
30 are prepared in situ during the fermentation reaction and in

1 this native substance remain active within the final composi-
2 tion. Again, no separate dissolving and enzyme activation
3 steps are necessary in using the product composition. The
4 composition is not only completely acceptable for all household
5 and commercial drainage disposal but actually enhances the
6 biological functioning of septic systems. Further repeated or
7 continued use of the product has been found to clean and reduce
8 previously accumulated waste in pipes through which it is
9 disposed thereby improving such drainage systems by its bio-
10 logical cleaning activity.

~~WHAT IS CLAIMED IS:~~

1 1. An aqueous cleaning composition comprising a mixture
2 of active ingredients consisting essentially of a major amount of
3 surfactants, a minor amount each of citric acid and an enzymatic
4 fermentation reaction product of molasses, sugar, malt, yeast and
5 a magnesium salt.

1 2. The composition of claim 1 wherein the reaction
2 product is prepared from an aqueous mixture containing between
3 about 40 and about 80% cane blackstrap molasses, between about
4 15 and about 40% raw cane sugar, between about 5 and about 10%
5 diastatic malt, between about 0.5 and about 5% yeast and between
6 about 0.5 and about 5% magnesium salt said percents being by
7 weight based on the total amount of reacting ingredients.

1 3. The composition of claim 2 wherein the yeast
2 comprises *saccharomyces cerevisiae*.

1 4. The composition of claim 1 wherein the surfactants
2 are selected from the group consisting of organic anionic and
3 nonionic surfactants and inorganic alkali metal phosphates, borates,
4 carbonates, silicates and mixtures thereof.

1 5. The composition of claim 4 wherein the total amount
2 of anionic surfactants is between about 40 and about 80% by weight
3 based on the active ingredients.

1 6. The composition of claim 4 wherein the surfactants
2 comprise a mixture of between about 40 and about 70% by weight
3 anionic surfactants selected from the group consisting of alkali
4 metal sulfates of alcohols having between about 8 and about 20
5 carbon atoms and alkali metal salts of fatty acids having between
6 about 10 and about 18 carbon atoms and mixtures thereof, up to
7 about 10% by weight alkyl aryl polyethylene glycol nonionic sur-
8 factants and between about 30 and about 60% by weight inorganic
9 surfactants selected from the group consisting of sodium tripoly-
10 phosphate, sodium pyrophosphate, sodium borate, sodium sesqui-
11 carbonate, sodium silicate and mixtures thereof.

1 7. The composition of claim 6 wherein the mixture of
2 active ingredients contains between about 0.5 and about 10% by
3 weight of the fermentation reaction product.

1 8. The composition of claim 6 wherein the mixture of
2 active ingredients contains up to about 10% by weight citric acid.

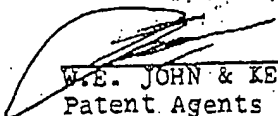
1 9. The composition of claim 1 wherein the ratio of active
2 ingredients to water is between about 1:5 and about 1:20 by weight
3 respectively.

1 10. A method of improving a cleaning composition com-
2 prising an aqueous solution of one or more surfactants selected
3 from the group consisting of anionics, nonionics and inorganic
4 alkali metal phosphates, borates, carbonates and silicates and
5 mixtures thereof the improvement comprising adding thereto a minor
6 amount of an aqueous fermentation product prepared by reacting
7 molasses, sugar, yeast, malt and a magnesium salt.

1 11. A method of cleaning comprising contacting a soiled
2 substrate with an aqueous cleaning composition of claim 1.

12. A composition substantially as hereinbefore
described.

DATED this 18th day of NOVEMBER, 1969.


W.E. JOHN & KERNICK,
Patent Agents for the Applicants.